

DETAILED ACTION

The amendment filed on December 22, 2009 has been entered. Claim 7 is cancelled, and claims 1-6 and 8-20 are pending.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-6 and 8-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 18, and their dependents recite a “heat exchanger,” namely a device or final product. The cover 6 of the instant invention is temporarily held by brackets 11 during assembly prior to brazing, is not “removably mounted” in the final product.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5-6, 9, 11-12 and 17-18 as best understood are rejected under 35 U.S.C. 102(b) as being anticipated by Seewald. Figures 2-3 of Seewald discloses a heat exchanger comprising a tank 14 made of bent sheet metal lid 15 defining two semicircular chambers, and a base 1 including a flat cover 2 which is “removably mounted” relative to the lid 15 with a positive fit.

Regarding claims 5-6, Figure 2 of Seewald discloses inlet and outlet openings 5, 6 with outward bent edges to form passages 12, 13.

Regarding claim 9, Figure 4 of Seewald discloses pipe 17 disposed inside the bent edge of passage 13 of outlet opening 6.

Regarding claim 12, Figures 1a-c of Seewald discloses slot 7 receiving separating walls to provide four fluid passes.

Regarding claim 17, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987). Employing the device of Seewald in a vehicle air conditioning system does not change the structure of the device.

Regarding claim 18, Figure 2 of Seewald discloses two separate covers 2 independently “removably mounted” relative to lid 15 with two tubular chambers. The two covers lie in a plane perpendicular to the centerline of the two chambers.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-4 and 19-20 as best understood are rejected under 35 U.S.C. 103(a) as being unpatentable over Seewald in view of Cribari.

Seewald discloses all the claimed limitations except a number of stops on the tank.

Cribari discloses a heat exchanger comprising a tank 4 having a tunnel shaped part 18, a base 16, and a cover 6, wherein the tunnel shaped part 18 has a number of stops 24 for the purpose of positioning the cover.

Since Seewald and Cribari are both from the same field of endeavor and/or analogous art, the purpose disclosed by Cribari would have been recognized in the pertinent art of Seewald.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Seewald a number of stops on the tank for the purpose of positioning the cover as recognized by Cribari.

Regarding claims 3 and 19, Figures 8-9 of Cribari discloses bent brackets/tabs 42 on tunnel shaped part 18.

Regarding claim 20, as applied to claims 5-6 above, Figure 2 of Seewald discloses inlet and outlet openings 5, 6 with outward bent edges (i.e. hollow cylinder) to form passages 12, 13 whose centerline is perpendicular to the plane of the cover 2.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seewald in view of Chiba et al.

The device of Seewald lacks a pipe attached on the outside of the opening.

Chiba et al Figures 5 and 6) discloses a heat exchanger comprising a tank 32, 42 having an opening with a bent edge 35, 45 and a pipe 34, 44 fitted on the outside thereof for the purpose of positioning the pipe during assembly.

Since Seewald and Chiba et al are both from the same field of endeavor and/or analogous art, the purpose disclosed by Chiba et al would have been recognized in the pertinent art of Seewald.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Seewald and a pipe fitted on the outside of the bent edge for the purpose of positioning the pipe during assembly as recognized by Chiba et al. As disclosed in Figure 3 of Chiba et al, pipe 4 is fitted inside the bent edge 8. Hence, Chiba et al discloses two alternate pipe joint connections, which are obvious variants of one another. Furthermore, it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. *In re Einstein*, 8 USPQ 167.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seewald in view of Gowan.

The device of Seewald lacks the tank having a tapered edge.

Gowan (Figure 10) discloses a heat exchanger comprising a tank 12 having a cover 40 with a taper fitted therein for the purpose of facilitating insertion during assembly.

Since Seewald and Gowan are both from the same field of endeavor and/or analogous art, the purpose disclosed by Gowan would have been recognized in the pertinent art of Seewald.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Seewald a cover with a taper for the purpose of facilitating insertion during assembly as recognized by Gowan. As noted above, it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. *In re*

Einstein, 8 USPQ 167. Therefore, to employ a taper on the tank edge instead of the cover as taught by Gowan would have been obvious to one of ordinary skill in the art.

Claims 13-14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seewald in view of Yamamoto et al (5,311,935).

The device of Seewald lacks the specific dimensions of the fin.

Yamamoto et al ('935) discloses a heat exchanger comprising a plurality of flat tubes 23 and corrugated fins 24, wherein the fins have a rib height of 3.0 to 6.0 mm (Figure 10) and a rib pitch of 1.5 mm (Figure 11, i.e. about 67 ribs per 100 mm) for the purpose of achieving optimal heat transfer.

Since Seewald and Yamamoto et al ('935) are both from the same field of endeavor and/or analogous art, the purpose disclosed by Yamamoto et al ('935) would have been recognized in the pertinent art of Seewald.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Seewald fins having a rib height of 3.0 to 6.0 mm and a rib pitch of 1.5 mm for the purpose of achieving optimal heat transfer as recognized by Yamamoto et al ('935).

Regarding claim 14, Yamamoto et al ('935) (Figure 11) discloses the rib pitch is 3.0 mm. As disclosed in Figure 1 of Yamamoto et al, the rib pitch, Pf and rib height, Hf define the base and height of a triangle, wherein opening angle equals the inverse tangent of half of Pf divided by Hf. As calculated, the opening angle, $\alpha = 26.6^\circ$ (where Pf = 3.0 mm and Hf = 3.0 mm) meets the claimed range.

Regarding claim 16, Figure 14 of Yamamoto et al ('935) discloses the tube "width" ranges from about 1.2 to 2.0 mm.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seewald in view of Yamamoto et al (5,271,458).

The device of Seewald lacks the specific radius of curvature of the fin.

Yamamoto et al ('458) discloses a heat exchanger comprising a plurality of flat tubes 102 and corrugated fins 101 having a radius of curvature between 0.14 to .037 mm for the purpose of achieving optimal heat transfer (abstract).

Since Seewald and Yamamoto et al ('458) are both from the same field of endeavor and/or analogous art, the purpose disclosed by Yamamoto et al ('458) would have been recognized in the pertinent art of Seewald.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Seewald a fin having a radius of curvature between 0.14 to .037 mm for the purpose of achieving optimal heat transfer as recognized by Yamamoto et al ('458).

Response to Arguments

Regarding applicants' remarks with respect to the Information Disclosure Statement filed on March 20, 2009, the Examiner does not understand how the patents to da Silva entitled, "Ink refill and recharging system," "Irrigation and drainage based on hydrodynamic unsaturated fluid flow" and "Fluid conduction utilizing a reversible unsaturated siphon with tubarc porosity

action” are pertinent to the instant invention. The Examiner believed the citations to be an inadvertent error. The Examiner agrees that reading the titles of the references requires some degree of “consideration” or comprehension. However, 37 CFR § 1.56 requires “Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office ***all information known to that individual to be material to patentability*** as defined in this section.” Therefore, the Examiner requests applicants and/or counsel to explain how and/or why the da Silva patents are material to the patentability of the instant invention of “A heat exchanger for a motor vehicle air conditioning system.”

The objection to the drawings under 37 CFR 1.83(a) in view of the cancellation of claim 7.

The rejection of claims 1-17 under 35 U.S.C. 112, second paragraph are withdrawn in view of the claim amendments.

The Examiner confirms Seewald (DE 101 32 485) was cited on PTO-1449 filed on July 24, 2006.

Applicants’ arguments have been fully considered but they are not persuasive.

The rejections in view of the secondary references of Cribari, Chiba et al, Gowan, Yamamoto et al ('935) and Yamamoto et al ('458) are deemed proper, since the only argument is that Seewald does not disclose “removably mounted” covers.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard R. Leo whose telephone number is (571) 272-4916. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/ Leonard R. Leo /
PRIMARY EXAMINER
ART UNIT 3744

April 7, 2010